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TECHNICAL SAFETY WORKSHEET

Equipment Name:

Manufacturer:

Address

Telephone Number:

Fax Number:

Date Prepared:

Photograph

Equipment Description:

Evaluation Method:

HAZARD CATEGORIES	YES	NO	N/A	DISC*
MECHANICAL				
1. Are any parts such as gears, fans, or belts in motion and accessible by the operator? if yes,				
a. Are shields screens, guards, covers, or other barriers provided to protect the operator? (29CFR1910.212)				
b. Is a warning sign provided? (29CFR1910.145)				
c. Are openings in or around guards small enough to prevent operators from inserting fingers? (29CFR1910.212)				
2. Is there a possibility of injury from an inadvertent start or stop of the equipment?				
3. Is the equipment designed to permit lockout protection prior to maintenance or repair? (29CFR1910.147)				
4. Is there a pump? if yes,				
a. Is there a remote shut-down switch? (29CFR1910.305)				
5. Is there a compressor? if yes,				
a. Is there a remote shut-down switch? (29CFR1910.305)				
6. Is there any liquid present in the system? if yes,				
a. Can it cause hydraulic shock by rapid closure of a valve or by other sudden stoppage or repetitive motion? if yes,				
b. Is protection provided for the operator?				
7. Is there any component where mechanical energy could be stored? if yes,				
a. Is adequate information provided in the manufacturer documentation for releasing the energy prior to maintenance or repair? (29CFR1910.147)				
b. Is there a means of isolating the operator from the energy source for maintenance or repair? (29CFR1910.147)				
8. Are there any lifting or lowering devices? if yes,				
a. Are the rated load capacities posted? (29CFR1910.179)				
b. Is a warning provided against loading cables, chains and hoists beyond their rated limits? if yes, (29CFR1910.179)				

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HAZARD CATEGORIES	YES	NO	N/A	DISC*
c. Does warning indicate that loads should not be raised or lowered with quick starts or stops that will put heavy strain on the cable or chains? (29CFR1910.179)				
9. Are there any sharp points, edges, or ragged surfaces that can cause operator injury? if yes,				
a. Is protection provided for the operator? (29CFR1910.212)				
10. Are there any hinged covers or access panels? If yes,				
a. Are interlocks present where personnel hazards are present? (29CFR1910.147)				
b. Can the covers or access panels be secured in the open position? (29CFR1910.147)				
11. Are critical assemblies that could cause operator hazards fastened so that they will not loosen or separate, (using lock nuts, lock washers, cotter pins, or similar devices)? (29CFR1910.212)				
12. Is there a surface accessible to the operator hot enough to cause burns by inadvertent contact? if yes, (29CFR1910.212)				
a. Is a warning sign posted for the operator? (29CFR1910.145)				
13. Is there a surface accessible to the operator cold enough that can cause skin to adhere and freeze? if yes, (29CFR1910.212)				
a. Is a warning sign posted for the operator? (29CFR1910.145)				
14. Is there a condition that could create a slip hazard during equipment operation?				
15. Is the equipment bonded and grounded to avoid static buildup?				
REMARKS:				
PRESSURE AND VACUUM RELIEF				
16. Does the equipment produce levels of pressure or vacuum that could be harmful to the operator or Maintenance personnel? if no, go to the next section. (29CFR1910.169)				
17. Is there a high pressure alarm?				
18. Is a pressure relief valve provided? (29CFR1910.169)				
19. Are pressurized components marked with a warning that they must be depressurized before commencement of repair or maintenance? (29CFR1910.147)				
20. Does equipment have a breathing air compressor? if yes,				
a. Is the compressor oil lubricated? if yes,				
b. Does the compressor have high temperature and carbon monoxide alarms?				
21. Is there a direct pressure readout gage? if yes, (29CFR1910.169)				
a. Does it have shatter proof glass or plastic faces and blowout plugs?				
REMARKS:				
PIPING AND VALVES				
22. Are there cold or hot pipe lines accessible to the operator? if yes,				
a. Is protection such as piping insulation provided? (29CFR1910.212)				
b. Is insulation made of non-asbestos material?				
23. Is the piping of the equipment fastened securely so that it will not vibrate when in operation?				
24. Are spray guards installed on pipe flanges in areas where a leak could				

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HAZARD CATEGORIES	YES	NO	N/A	DISC*
injure operators or start fires?				
25. Is plastic or a plastic-lined piping system being used? if yes,				
a. Have pipes been grounded to avoid static buildup? (29CFR1910.304)				
26. Are flexible hoses being used? if yes,				
a. Are they adequately protected against chafing, twisting, or other damage?				
27. Can operators safely close isolation valve(s) during a fire or accidental release? (29CFR1910.147)				
28. Is double valve protection provided where personnel would be at risk during repair/maintenance? (29CFR1910.147)				
29. Are there any electric-actuated valves? if yes,				
a. Are they located where leaks could drip or spray into the actuators and result in fires? (29CFR1910.212)				
30. If the equipment is equipped with tanks, is overflow protection provided?				
REMARKS:				
ELECTRICAL				
31. Are all switches clearly labeled? (29CFR1910.303)				
32. Is there an emergency disconnect switch? if yes,				
a. Is it clearly marked and accessible by the operator? (29CFR1910.145)				
33. Is a means provided for grounding the equipment? (29CFR1910.304)				
34. Is the equipment designed to permit lockout protection prior to maintenance or repair? (29CFR1910.147)				
a. Does documentation adequately describe this process?				
35. Are electrical components protected from moisture? (29CFR1910.304)				
36. Does equipment contain a capacitor or other energy storing device? if yes, (29CFR1910.304)				
a. Is adequate information provided in manufacturer documentation for releasing the energy prior to maintenance or repair?				
b. Is there a means of isolating the operator from the energy source for maintenance or repair? (29CFR1910.305)				
37. Does manufacturer documentation provide adequate information concerning electrical source requirements to ensure proper installation? (29CFR1910.303)				
38. Can electrical failure cause unsafe conditions to the operator? if yes,				
a. Is protection provided against electrical failure?				
39. Would an unsafe condition occur if lighting is lost? if yes, (29CFR1910.303)				
a. Is emergency lighting available?				
40. Are any live conductors accessible by the operator? (29CFR1910.303)				
41. Are circuit breakers in a readily accessible location? (29CFR1910.304)				
a. Is GFCI required? if yes				
Is one properly installed?				
42. Are there any points, such as motor brushes or open circuit breakers, where arcing or sparking can occur? if yes, (29CFR1910.304)				
a. Are shields provided to protect the operator from potential electrical shock? (29CFR1910.304)				
b. Are there any potentially explosive vapors present?				

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HAZARD CATEGORIES	YES	NO	N/A	DISC*
29CFR1910.307				
43. Are there locations where lint, grease, or other flammable material can accumulate? if yes, (29CFR1910.307)				
a. Are these locations easily accessible for cleaning?				
44. Are wires and cables adequately secured and protected against chafing, pinching, or cutting? (29CFR1910.305)				
REMARKS:				
HAZARDOUS MATERIALS				
45. Are there any hazardous materials provided with the equipment or recommended by the manufacturer for use with the equipment? if no, go to the next section.				
46. Are Material Safety Data Sheets (MSDS) provided for the hazardous materials? (29CFR1910.1200)				
47. Does manufacturer documentation require the use of Personal Protective Equipment (PPE)? if yes,				
a. Does the documentation list the recommended PPE?				
48. Is the material a gas? if yes,				
a. Can it act as an asphyxiant? if yes,				
b. Does it have an odor?				
49. Is periodic cleaning required? if yes,				
a. Are the cleaning materials reactive with any process materials?				
b. Do the cleaning materials require special handling?				
50. Are there any toxic materials provided or recommended by the manufacturer? if no, go to question 52.				
51. Name of toxic materials:				
a. _____	b. _____			
c. _____	d. _____			
Fill out the YES, NO, or N/A sections for each question by using a, b, c, etc. to denote applicable material.				
52. Is the operator exposed to a toxic material?				
53. Are there any flammable or combustible materials provided or recommended by the manufacturer? if no, go to question 60.				
54. Name of flammable or combustible materials:				
a. _____	b. _____			
c. _____	d. _____			
Fill out the YES, NO, or N/A sections for each question by using a, b, c, etc. to denote applicable material.				
55. If the materials are liquid, What are the flash points? _____.				
_____.				
56. Is the material exposed to heat and high temperature?				
57. Is the material exposed to electromagnetic radiation?				
58. Is the material exposed to mechanical shock, electrical current, a spark or arc?				
59. Is the material exposed to any other means of ignition?				
60. If the occurrence of a fire is possible, has a manufacturer recommended a means of extinguishing the fire?				
61. Are there any oxidizers provided or recommended by the manufacturer? if no, go to question 65.				
62. Name of oxidizer:				
a. _____	b. _____			
c. _____	d. _____			

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Fill out the YES, NO, or N/A sections for each question by using a, b, c, etc. to denote applicable material.				
63. Is the material exposed to heat and high temperature?				
64. Is the material exposed to hydrocarbons?				
65. Is the material exposed to water?				
66. Are there any corrosive materials provided or recommended by the manufacturer? if no, go to the next section.				
67. Name of corrosive materials: <div style="display: flex; justify-content: space-between; margin-top: 5px;"> a. _____ b. _____ </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> c. _____ d. _____ </div>				
Fill out the YES, NO, or N/A sections for each question by using a, b, c, etc. to denote applicable material.				
68. Is the operator exposed to a corrosive material?				
REMARKS:				
NOISE AND VIBRATION				
69. Are levels of noise generated by the equipment greater than 84dB during normal operation? if no, go to question 71. (29CFR1910.95)				
70. Are warning signs present? (29CFR1910.145)				
71. Is the operator isolated from the noise source?				
72. Does equipment generate potentially hazardous levels of vibration that could be transmitted to the user? if yes,				
a. Is the source provided with vibration isolators?				
REMARKS:				
ADDITIONAL HAZARDS				
73. Should warning signs be posted in the operating area to restrict access by unauthorized individuals? if yes,				
a. Are they provided?				
74. Should warning signs be posted in the operating area to remind the operator that personal protective equipment (PPE) is required?				
a. Are they provided?				
75. Does the process generate toxic dust or does the process generate a toxic residue that could become airborne upon drying? if yes,				
a. Can the operator be exposed to dust?				
b. Can the maintenance person be exposed to dust?				
76. Does operation or maintenance of the equipment require local exhaust? if yes,				
a. Is it provided with the equipment? if not,				
b. Is it provided by the facility?				
77. Does equipment have platforms or elevated areas over 6 feet that an employee must access during operations or maintenance? if yes,				
a. Are protection devices provided?				
REMARKS:				
RADIATION				
78. Does the process require the use of, or generate ionizing or non-ionizing (laser or radio frequency) radiation? if no, go to the next section.				
79. Is the level of radiation sufficient to cause personal injury (29CFR1910.96)? if so,				
a. Is shielding provided to minimize operator exposure?				
b. Is shielding provided for maintenance personnel exposure?				

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80. Does the process require the use of ionizing radiation? if yes,				
a. What is the activity level? _____				
b. Does it require a Navy permit?				
81. Does the process require the use of non-ionizing radiation? if yes,				
a. What is the energy level? _____				
b. Does it require a Navy permit?				
REMARKS:				
ERGONOMIC				
82. Is there heavy lifting activity required during equipment use?				
83. Is the equipment pushed or pulled on regular basis?				
84. Is any force required to keep the equipment in position?				
85. Are any repetitive motions required?				
86. Does work require the same postures for a long periods of time? if yes,				
a. What are these postures? _____.				
REMARKS:				
MANUFACTURER DOCUMENTATION				
87. Does manufacturer documentation provide adequate information for safe installation, operation and maintenance of the equipment?				
88. Are the instructions provided by the manufacturer concise, simple and clear for the?				
a. Installation of the equipment				
b. Operation of the equipment				
c. Maintenance of the equipment				
REMARKS:				

*Discussion: Indicates a potential safety or health hazard or condition that could cause personal injury or illness.

RECOMMENDATIONS:

DOCUMENTATION:

DOCUMENTATION REVIEW:

POINTS OF CONTACT:

<u>Title</u>	<u>Name</u>	<u>Phone</u>	<u>Internet E-mail</u>
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EVALUATED BY: Safety/Health Analysts

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